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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,949	08/09/2001	Jan Zavada	D-0021.5C-1	9458

24988 7590 02/09/2005

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465 CALIFORNIA, SUITE 450
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EXAMINER	
YAEN, CHRISTOPHER H	
ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/807,949	ZAVADA ET AL.	
	Examiner	Art Unit	
	Christopher H Yaen	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-39,41 and 42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-39,41 and 42* is/are rejected.

7)☒ Claim(s) *31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Exhibit A (2 pages)*.

DETAILED ACTION

Re: Zavada *et al*
Priority Date: 22 October 1999

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/14/2004 has been entered.

2. Claims 1-30,40, and 43-44 are canceled without prejudice or disclaimer.

3. Claims 31-39, and 41-42 are examined on the merits.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

5. Claim 31 is objected to because of the following informalities: items "(1)", "(2)", and "(3)" found near the end of the claim is deemed improper for publication purposes. Applicant must re-number the items using another numbering scheme, for example "(i)", "(ii)", and "(iii)". Appropriate correction is required.

Specification

6. This application claims priority to US Applications 09/177,776 and 09/178,115. The the first line of the specification needs to be updated and or added to reflect the priority status of these US application.

Claim Rejections Maintained/Re-Instated - 35 USC § 102

7. Upon further review and reconsideration, the rejection made under 35 USC § 102(b) as being anticipated by Zavada *et al* (Int. J. Oncology 1997;10:857-863, previously cited) is hereby reinstated for the reasons of record (see paper mailed 2/12/2003) and further elaborated herein as they apply to newly amended claims 31-32,34, 37-39, and 41. In the response filed 6/16/2003, applicant argues that Zavada *et al* do not teach each and every limitation or step of the claimed invention and therefore it does not serve as an anticipatory reference. More specifically, applicant argues that Zavada *et al* do not teach a method for identifying an organic or inorganic molecule that specifically binds to a MN protein, instead applicant contends that the reference only teaches a method of determining whether a MN protein was a cell adhesion molecule (CAM) (see page 18 of 6/16/2003 response). Additionally, applicant argues that the methods of Zavada *et al* teach an additional step, namely the formation of a complex between and organic molecule and another molecule or bacterial cell (i.e. a complex of the M75 antibody and the SAC molecule). Applicant points out that in the instant invention, the binding of the MN protein to a substrate is followed by the addition of any organic or inorganic molecule. Applicant's arguments have been carefully considered but are not deemed persuasive to overcome the rejection of record.

The claims of the instant invention are drawn to the identification of an organic or inorganic molecules that binds to a site on a MN protein or polypeptide, wherein the site is where cells bind to the MN protein, comprising the administration of an organic or inorganic test compound to determine whether cells would adhere to the site on the MN

protein. The steps of the invention are detailed in letters (a) - (e). In step (e), the invention requires the identification of whether the organic or inorganic test compound inhibits the adhesion of cells to the MN protein/polypeptide. Zavada *et al* teach a cellular adhesion assay which comprises the steps of (see page 858-859 under "*Adhesion assay.*"): (a) allowing MN protein to bind to a substrate (see page to which cells do not bind (see page 861, wherein it is taught that cells do not bind unless coated with a binding protein); (b) rinsing unbound MN protein; (c) incubating the bound MN protein with vertebrate cells; (d) rinsing unbound vertebrate cells from the bound MN protein; and (e) identifying whether an antibody inhibits the adhesion of the vertebrate cell to the MN protein by specifically binding to the said site (see page 861 under "*Cell adhesion assay*"). In the instant case, Zavada *et al* identified by using NIH 3T3 cells that an M75 antibody (i.e. an organic molecule), which has been identified by Zavada *et al* as being specific for MN (see page 861, 2nd column) does not inhibit the adhesion of the NIH3T3 cells to the MN protein, thereby identifying an organic molecule as outlined in step (e) of the instantly claimed invention. The claims are drawn to a method of identifying, and in the instant case Zavada *et al* identified that the M75 antibody was not able to inhibit the binding of the NIH3T3 cells to the site on the MN protein. Therefore, the limitations of the claim have been anticipated. Moreover, Zavada *et al* teach that the MN protein is identified as that which is specifically bound by the M75 antibody (see page 861, 2nd col.), and is encoded by a nucleotide sequence that is identical to SEQ ID No: 1, which is identified as Genbank accession number X66839 in figure 1 (see homology search – Exhibit A). The specification also defines organic molecule as

protein or polypeptides (see page 6) and because antibodies are peptides or proteins, the disclosure of an antibody by Zavada *et al* is encompassed within the term organic and protein or polypeptide as claimed.

Claims 37-39 are also anticipated by Zavada *et al* because the method is drawn to a method of identifying organic and inorganic molecules that binds specifically to a site on the MN protein. These claims further define characteristics of the organic and inorganic molecules (claim 37), further define the site (claim 38), and further define specific amino acid sequence of the site (claim 39). However the method is still drawn to a method of identifying molecules and Zavada *et al* identified that when an antibody, M75, was placed in contact with NIH3T3 cells, it was unable to inhibit growth, it was unable to bind to the proteoglycan-domain because the antibodies that are directed to the proteoglycan domain did not inhibit its binding, and that the site was outside of the amino acid sequences of SEQ ID No: 10, and 97-106. Finally, NIH3T3 cells are defined in the specification as being derived from mouse and therefore fall under the genus of mammalian cells as claimed.

Applicant also argues that the antibody to the MN protein by itself did not inhibit the binding of cell to the MN protein and that the reference which is relied upon for anticipatory rejections must be enabling. Applicant's arguments have been carefully considered but are not deemed persuasive to overcome the rejection of record. In the instant case as argued and presented above, the fact that the antibody did not inhibit binding of the cell to MN is in itself a process of identification as claimed. Therefore,

the method outlined by Zavada *et al* is in fact enabling because it was able to identify molecules that were not able to inhibit the binding of the NIH3T3 cells to the MN protein.

Therefore, the rejection of the claims under 35 USC 102(b) as being anticipate by Zavada *et al* is maintained for the reasons of record.

New Arguments

Claim Rejections - 35 USC § 112, 1st paragraph

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 31-39, 41 and 42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 31 and dependent claims thereof specifically recite the VU-M75 hybridoma cell line that produces the monoclonal antibody M75.

It is apparent that the recited cell lines are required to practice the claimed invention, because they are specifically required in the claims. As required elements they must be known and readily available to the public or obtainable by a repeatable method set forth in the specification, or otherwise readily available to the public. If it is not so obtainable or available, the enablement requirements of 35 U.S.C. § 112, first

paragraph, may be satisfied by a deposit of the cell lines listed in claim 7. See 37 CFR 1.802.

The specification on page 75 discloses deposits of antibodies to the American Type Culture Collection. However, all of the required terms of the deposit under the Budapest Treaty have not been clearly defined in the specification.

If a deposit is not made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants or someone associated with the patent owner who is in a position to make such assurances, or a statement by an attorney of record over his or her signature, stating that the deposit has been made at an acceptable depository and that the following criteria have been met:

(a) during the pendency of this application, access to the invention will be afforded to one determined by the Commissioner to be entitled thereto;

(b) all restrictions imposed by the depositor on the availability to the public of the deposited material will be irrevocably removed upon granting of the patent;

(c) the deposit will be maintained for a term of at least thirty (30) years and at least five (5) years after the most recent request for the furnishing of a sample of the deposited material;

(d) a viability statement in accordance with the provisions of 37 CFR 1.807; and

(e) the deposit will be replaced should it become necessary due to inviability, contamination or loss of capability to function in the manner described in the specification.

In addition the identifying information set forth in 37 CFR 1.809(d) should be added to the specification. See 37 CFR 1.803 - 37 CFR 1.809 for additional explanation of these requirements.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 31-32,34,37-39, and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zavada *et al* (previously cited)

The teachings of Zavada *et al* (Int. J. Oncology 1997;10:857-863) are set forth above as they applied to claims 31-32,34,37-39, and 41. Zavada *et al* do not specifically or directly teach using human cells in the method outlined in the cited

reference of Int. J. Oncology 1997;10:857-863 so as to anticipate the instantly claimed invention.

However, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to use human cells in place of the NIH 3T3 cells used by Zavada *et al*. One of skill would have been motivated to use human cells in place of the NIH3T3 cells because the use of human cells more closely parallel the affects of an agent used for inhibitory effects when they are administered in vivo to a human. Further, Zavada *et al* specifically teaches that the MN protein was originally found in HeLa cells (a cell line derived from a human) and was also expressed in several other carcinomas, but absent from normal tissue from which the tumors are derived (see page 857). One of skill in the art would therefore be motivated to use HeLa cells as a part of the instant method because it possessed an endogenous source of the MN protein from which it is possible to screen for molecules that are capable of being inhibited by a test compound and by using HeLa cells, it would more closely model affects of a test compound on a human. One of skill in the art would expect a reasonable amount of success in substituting the NIH 3T3 cells in place of a human cell such as HeLa cells because by doing so, it would allow the artisan to positively identify inhibitors of the MN protein for human administration.

All other rejections are withdrawn in view of the applicant's amendments and arguments thereto as set forth in a paper filed 10/14/2004.

Conclusion

No claim is allowed.

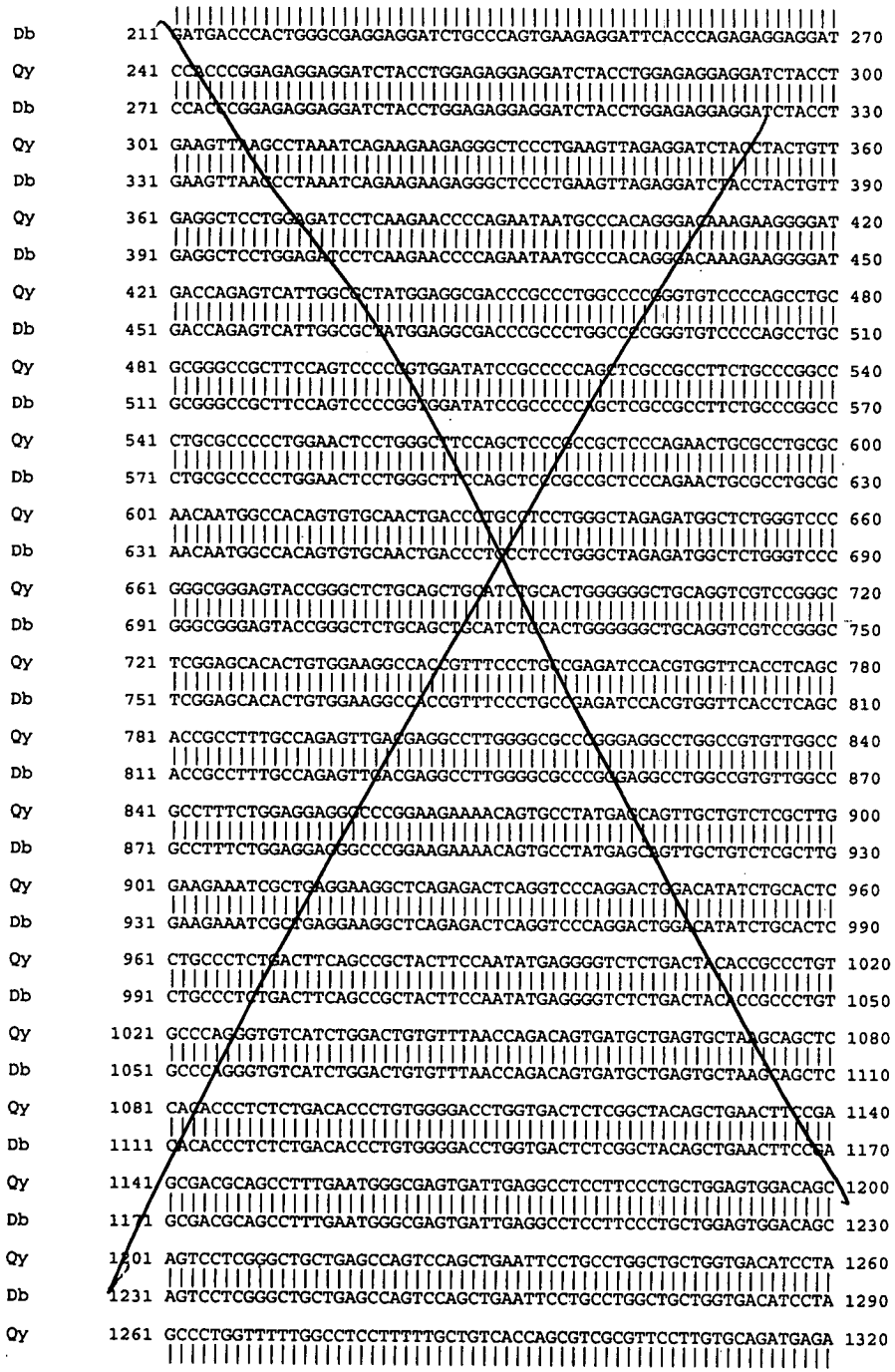
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher H Yaen whose telephone number is 571-272-0838. The examiner can normally be reached on Monday-Friday 9-5.

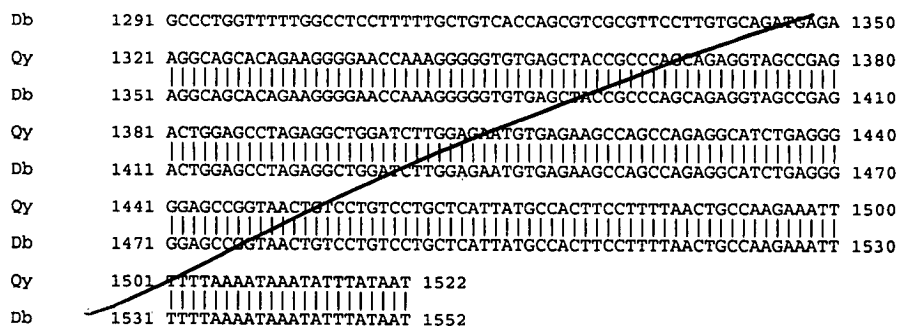
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Yaen
Art Unit 1642
February 5, 2005

Exhibit A
pg 1 of 2





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VERSION X66839.1 GI:1000701
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SOURCE Homo sapiens (human)
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REFERENCE 1 (bases 1 to 1552)
AUTHORS Pastorek,J.
TITLE Direct Submission
JOURNAL Submitted (11-JUN-1992) J. Pastorek, Institute of Virology, Slovak Academy of Sciences, Dubravska 9, 842 46 Bratislavia, SLOVAK REPUBLIC
REMARK revised by [3] MAT
REFERENCE 2 (bases 1 to 1552)
AUTHORS Pastorek,J., Pastorekova,S., Callebaut,I., Mornon,J., Zelnik,V., Opavsky,R., Zatovicova,M., Liao,S., Portetelle,D., Stanbridge,E.J., Zavada,J. and Burny,A.
TITLE Cloning and characterization of MN, a human tumor-associated protein with a domain homologous to carbonic anhydrase and a putative helix-loop-helix DNA binding segment
JOURNAL Oncogene 9 (10), 2877-2888 (1994)
MEDLINE 94366734
PUBMED 8084592
REFERENCE 3 (bases 1 to 1552)
AUTHORS Pastorek,J.
TITLE Direct Submission
JOURNAL Submitted (19-JUL-1994) J. Pastorek, Institute of Virology, Slovak Academy of Sciences, Dubravska 9, 842 46 Bratislavia, SLOVAK REPUBLIC
REMARK revised by [4] MAT
REFERENCE 4 (bases 1 to 1552)
AUTHORS Pastorek,J.
TITLE Direct Submission
JOURNAL Submitted (28-SEP-1995) J. Pastorek, Institute of Virology, Slovak Academy of Sciences, Dubravska 9, 842 46 Bratislavia, SLOVAK REPUBLIC
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Db       1171 GCGACGCAGCCTTTGAATGGGCGAGTGATTGAGGCCTCCTTCCCTGCTGGAGTGGACAGC 1230

Qy       1201 AGTCCTCGGGCTGCTGAGCCAGTCCAGCTGAATTCCTGCCTGGCTGCTGGTGACATCCTA 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1231 AGTCCTCGGGCTGCTGAGCCAGTCCAGCTGAATTCCTGCCTGGCTGCTGGTGACATCCTA 1290

Qy       1261 GCCCTGGTTTTTGGCCTCCTTTTTGCTGTCACCAGCGTCGCGTTCCTTGTGCAGATGAGA 1320
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1291 GCCCTGGTTTTTGGCCTCCTTTTTGCTGTCACCAGCGTCGCGTTCCTTGTGCAGATGAGA 1350

Qy       1321 AGGCAGCACAGAAGGGGAACCAAAGGGGGTGTGAGCTACCGCCCAGCAGAGGTAGCCGAG 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1351 AGGCAGCACAGAAGGGGAACCAAAGGGGGTGTGAGCTACCGCCCAGCAGAGGTAGCCGAG 1410

Qy       1381 ACTGGAGCCTAGAGGCTGGATCTTGGAGAATGTGAGAAGCCAGCCAGAGGCATCTGAGGG 1440
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1411 ACTGGAGCCTAGAGGCTGGATCTTGGAGAATGTGAGAAGCCAGCCAGAGGCATCTGAGGG 1470

Qy       1441 GGAGCCGGTAACTGTCCTGTCCTGCTCATTATGCCACTTCCTTTTAACTGCCAAGAAATT 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1471 GGAGCCGGTAACTGTCCTGTCCTGCTCATTATGCCACTTCCTTTTAACTGCCAAGAAATT 1530

Qy       1501 TTTTAAAATAAATATTTATAAT 1522
              |||||||||||||||||||||||
Db       1531 TTTTAAAATAAATATTTATAAT 1552
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